

a little above the horizon in the west. The observer at Riddleton reports, at 6.50 p. m. a large meteor in sw. 60° from horizon, direction wnw., throwing off particles like a rocket before passing out of sight behind the horizon. The observer at Florence Station reports, at 6.54 p. m. a very large and exceedingly bright meteor observed se. to sw., starting se. altitude 35° , course se. to nw., disappearing due west of station; time of flight observed 3 minutes and 10 seconds. The observer at Ashwood reports, at 7 p. m. a very beautiful meteor in the north, lighting up the heavens brighter than the moon; it exploded with a loud report. A little girl who saw it ran in and exclaimed "the moon's busted!" The observer at Kingston Springs reports, a meteor was observed at 7 p. m. in ne.; seemed to be as large as a man's head, moving sw., after being visible ten seconds, it exploded, scattering fire in all directions. The observer at Hohenwald reports, at 6.30 p. m. a very brilliant meteor, first observed a little below the moon (which was about an hour and a half above the horizon), it passed directly overhead, moving west and disappeared about where the sun sets; about two minutes after it passed it exploded with a report like a cannon at a distance, followed by rumbling noises for about a minute. This meteor was very brilliant, as trees and buildings cast dark shadows, which traveled around them from west to east as it progressed westward. Although the full moon was shining brightly, the light attracted attention in the houses where lamps were burning, parties saying was similar to the light thrown in through the windows by a person passing with a lighted lantern. The observer at McKenzie reports, a meteor at 6.35 p. m., se., direction sw., 45° above the horizon. The observer at Milan reports about 8 p. m., a large brilliant meteor about the size of an infant's head, appeared in the eastern sky 30° from the horizon, going in a southerly direction; when near the horizon it disappeared as if it had exploded; no noise was heard.

Meteors were also reported from the following stations:

Le Roy, New York, 1st, 14th.
New River Inlet, North Carolina, 2d.
Liberty Hill, Louisiana, 8th.
Cedar Rapids, Iowa, 12th.
Wausau, Wisconsin, 22d.
Archer, Florida, 27th, at 1 a. m., very bright.
Allison, Kansas, 27th, at 10.40 p. m., in the southern sky, passing northeastward.

WATER-SPOUTS.

The "New York Maritime Register" of March 11, 1885, contains the following:

Captain Simmons, of the British brig "Charley," at Point à Pitre, February 17th, reports that on the 6th, in latitude N. $37^\circ 30'$, and longitude W. 72° and 71° , passed near a water-spout, the water flying hundreds of feet into the air and going around at a fearful rate; the water-spout covered a space of five hundred or more square feet.

Sandy Hook, New Jersey: at 9.45 a. m. on the 10th a water-spout was observed in the direction of the Scotland light-ship, about four miles distant; it was clearly defined and lasted about one minute.

The s. s. "British Princess," F. H. Freeth, commanding, reports that on February 21st, in latitude N. 39° , longitude W. 62° , several well-defined, and many imperfectly formed water-spouts were observed between noon and 8 p. m., Greenwich mean time.

The British bark "Artizan," J. Dwyer, master, reports having observed on February 22d, two large water-spouts in latitude N. $39^\circ 10'$, longitude W. $60^\circ 10'$.

POLAR BANDS.

Montrose, Colorado, 16th.
Archer, Florida, 4th, 7th, 10th, 23d.
Anna, Illinois, 21st.
Yates Centre, Kansas, 18th, 27th.
Mountainville, New York, 1st.
Memphis, Tennessee, 20th.
El Paso, Texas, 4th, 19th, 28th.
Rio Grande City, Texas, 4th, 5th, 6th, 24th, 26th.
Wytheville, Virginia, 6th, 7th.
Fort Bridger, Wyoming, 26th.

MIGRATION OF BIRDS.

Geese flying southward.—Cœur d'Alene, Idaho, 17th; Austin, Tennessee, 2d.

Geese flying northward.—Fort Smith, Arkansas, 27th; Sacramento, California, 14th, 25th; Red Bluff, California, 5th; Yates Centre, Kansas, 28th; Independence, Missouri, 28th; El Paso, Texas, 1st; Brownsville, Texas, 27th.

Ducks flying southward.—Memphis, Tennessee, 10th.

Ducks flying northward.—Indianola, Texas, 1st.

Brants flying northward.—Indianola, Texas, 26th.

DROUGHT.

Los Angeles, California, 28th: with the exception of a light sprinkle on the 23d, no rain fell at this place during the month, and much anxiety concerning the crops is felt by the farmers in this part of the state.

SAND STORM.

West Las Animas, Colorado: a violent sand storm prevailed from 6.45 to 7.30 p. m., the wind blowing at the rate of forty-five miles per hour from the north.

Wickenburg, Arizona, 12th, 28th.

PRAIRIE FIRES.

Dodge City, Kansas, 18th.

Fort Stockton, Texas: prairie fires were observed east of station on the 4th, and in the northeast on the 11th.

ERRATUM.

On page 15 of the January REVIEW, under "local storms and tornadoes," the tornado reported as having occurred at Haddock's Station, Georgia, at noon of the 12th, should read: midnight of the 11-12th.

NOTES AND EXTRACTS.

The following is an extract from the February, 1885, report of the "Alabama Weather Service," under direction of Prof. P. H. Mell, jr., Auburn:

The month of February has been decidedly colder than the same period of time in a number of years. The average temperature was about 6° below the normal. In north Alabama and in most of the middle portions of the State but little farm work has been accomplished because of the frozen condition of the ground on so many days of the month. The fall oats were all killed, and the farmers were compelled to replough the fields and sow them in spring grains. The wheat generally looks badly. In south Alabama the truck gardens suffered severely, the early cabbage crops being almost entirely destroyed. Two cold waves crossed the state on the 11th and 17th. During the passage of the first the temperature fell from 50° to 65° in twenty to thirty hours. This was the greatest reduction for the time recorded during the winter.

The average rainfall for the month was below the normal. There was a general snowfall on the 12th, and the depth of snow has been added to the amount of rain by considering ten inches of snow equal to one inch of rain. This is the rule adopted by the Chief Signal Officer. There were nine rainless days.

The average temperature for the winter just closed, $44^\circ.4$, is 5° below the normal. December 19th, January, 22d, and February 11th were the coldest days of the winter. The average precipitation, 17.99 inches, is about 5 inches above the normal.

Mean depth of rainfall, 3.58 inches; mean daily rainfall, 0.128; greatest depth of monthly rainfall, 6.25 inches at Newton; least depth of monthly rainfall, 2.23 inches at Brundidge; greatest daily rainfall, average for the state, 0.97 of an inch on the 24th; greatest local daily rainfall, 3.00 inches at Tuscaloosa on the 12th.

It is just twelve months since the organization of the State Weather Service. In reviewing the work accomplished the director compliments the observers upon the large amount of valuable data they have collected by earnest and careful investigation. In some respects the year has yielded to the watchful observers material that has been highly prized by students of meteorology in other sections. The bulletins of the service have been in demand, and many have been circulated outside of the state among the scientists of the country. It is to be regretted that so few of the stations were able to present a continuous record during the year; but at the end of another annual period the director trusts that the list of complete records will be very largely increased.

The railway signal service has become an established fact, and the amount of good that has accrued to the people of the state wherever the flags have been raised cannot be calculated. Expressions of indorsement and hearty approval have been sent to the director from all sections, and many stations where signals are not displayed have sent urgent requests to have the same favors extended to them.

State summary.

Mean temperature, $42^\circ.6$; highest temperature, 80° at Mount Willing on the 9th; lowest temperature, 1° at Gadsden on the 11th; range of temperature, 79° ; greatest monthly range of temperature, 69° at Gadsden; least monthly range of temperature, 49° at Mobile; mean daily range, 13° ; greatest daily range of temperature, 49° at Tuscaloosa on the 9th; least daily range of temperature, 0° at Clintonville on the 13th and Fayette on the 8th.

Days of general rainfall, 8th, 9th, 15th, 24th; average number of days on which rain fell, 8; average number of cloudy days, 10; average number of